

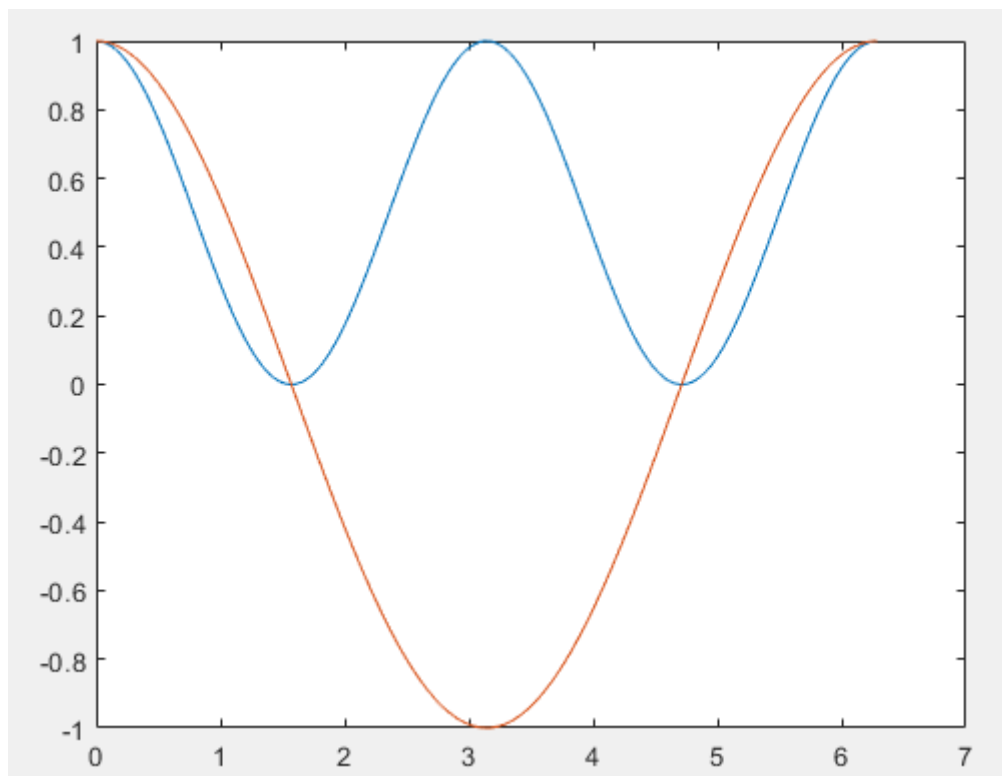
### TP 3 : outils logiciels

Exercice 1 :

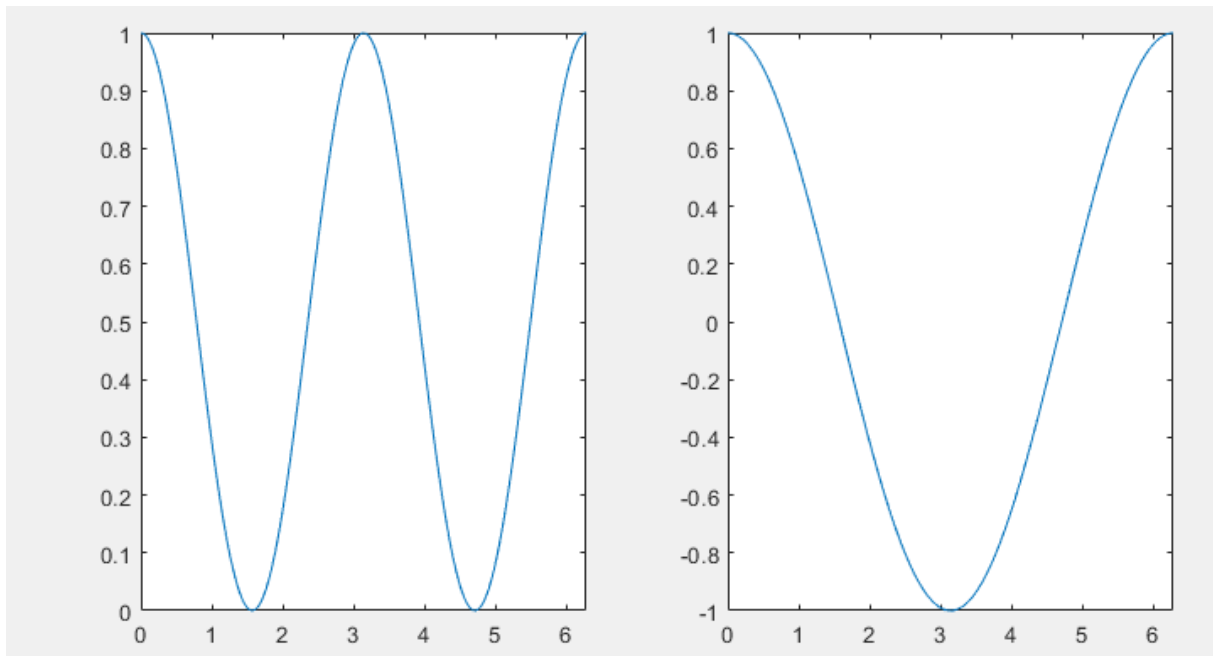
```
function a =h1(x)
a=cos(x)
a=a.^2
end
```

```
function b =h2(x)
b=cos(x);
end
```

```
x = linspace(0,2*pi,200);
plot(x,h1(x))
hold on
plot(x,h2(x))
```



```
x = linspace(0,2*pi,200);
subplot(1,2,1); plot(x,h1(x));
subplot(1,2,2); plot(x,h2(x));
```



Exercice2 :

```
x = input("Donner l'angle de x");
u=1;
cosinusx=1;
n=2;
while abs(u)>1*10^-5
    u= -(x.^2*u)/(n*(n-1));
    cosinusx=cosinusx+u;
    n=n+2;
end
disp(cosinusx)
```

Donner l'angle de x

$\pi/5$

0.8090

Exercice 3 :

```
a=0;
b=2;
c=(a+b)/2;
while abs(a-b)>10^-3
    if(af(c)<0)
        a=c;
    else
        b=c;
    end;
    c=(a+b)/2;
end
disp(c)
```

réponse :1.3521

Exercice 4 :

```
1) R1=input("Donner la resistance de R1 :");
R2=input("Donner la resistance de R2 :");
R3=input("Donner la resistance de R3 :");
type=input("Donner le type de montage (ecrire 1 si ces en serie et 2 si ces en parallele) ");
x=0;
if(type==1)
    x=R1+R2+R3;
end
if(type==2)
    x=(R1*R2*R3)/(R1*R2+R3*R2+R3*R1);
end
disp(x)
```

```
2) x=0:10;
y=0:10;
c=x'*y;
disp(c)
```

réponse :

```
0  0  0  0  0  0  0  0  0  0  0
0  1  2  3  4  5  6  7  8  9 10
0  2  4  6  8 10 12 14 16 18 20
0  3  6  9 12 15 18 21 24 27 30
0  4  8 12 16 20 24 28 32 36 40
0  5 10 15 20 25 30 35 40 45 50
0  6 12 18 24 30 36 42 48 54 60
0  7 14 21 28 35 42 49 56 63 70
0  8 16 24 32 40 48 56 64 72 80
0  9 18 27 36 45 54 63 72 81 90
0 10 20 30 40 50 60 70 80 90 100
```

Exercice 5 :

1)La taille de ce vecteur est de 491.

```
2) w=V(1:10);
x=[w V(end-4:end)];
Réponse :
```

```
W=10  11  12  13  14  15  16  17  18  19
```

```
X=10  11  12  13  14  15  16  17  18  19 496 497 498 499 500
```

```
3)z=V(2:2:end);
```

```
4) m=[1:10 ones(1,3);
      11:20 ones(1,3);
      zeros(1,13);
      21:30 ones(1,3);];
```

Réponse :

1	2	3	4	5	6	7	8	9	10	1	1	1
11	12	13	14	15	16	17	18	19	20	1	1	1
0	0	0	0	0	0	0	0	0	0	0	0	0
21	22	23	24	25	26	27	28	29	30	1	1	1

```
5) n=m([1:2 4],[3 7 11]);
```

Réponse :

3 7 1

13 17 1

23 27 1

```
6) p=[m(1,7:10);m(2,7:10);m(4,7:10)];
```

Réponse :

7 8 9 10

17 18 19 20

27 28 29 30

```
7) q=[m(1,4),m(1,7);m(4,4),m(4,7)];
```

Réponse :

4 7

24 27

Exercice 6 :

```
1) a=[1:3;4:6;7:9];
    disp(a)
```

réponse :

1	2	3
4	5	6
7	8	9

```
2) a=[1:3;4:6;7:9];  
a(3,3)=0;  
disp(a)  
réponse :
```

1	2	3
4	5	6
7	8	0

```
3) a=[1:3;4:6;7:9];  
a(3,3)=0;  
a(:,2)=4;  
disp(a)
```

```
réponse :  
      1      4      3  
      4      4      6  
      7      4      0
```

```
4) b=[a(:,3),a(:,2),a(:,1)];  
disp(b)
```

```
réponse :  
      3      2      1  
      6      5      4  
      9      8      7
```

```
5) c=[a b(:,1),b(:,2),b(:,3)];  
disp(c)
```

```
Réponse :  
      1      2      3      3      2      1  
      4      5      6      6      5      4  
      7      8      9      9      8      7
```

```
6) d=a(1:2,2:3);
```

```
Réponse :
```

2	3
5	6